



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/566,280

06/15/2006

Yundong Wang

4662-140

5147

23117 7590 11/03/2008
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

LEE, RIP A

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,280	Applicant(s) WANG ET AL.	
	Examiner RIP A. LEE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1796

DETAILED ACTION

This office action follows a response filed on July 17, 2008. Claim 1 was amended. Claim 11 was canceled, and new claims 14-19 were added. Claims 1-10 and 12-19 are pending.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10 and 12-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Amended claim 1 and new claims 18 and 19 recite a polymer composition having a hardness characterized by a Shore A reading, however, the time delay has not been indicated. The reading is a measure of the resistance of a polymer toward indentation by an indenting tool. While the test force range and indenter type are standardized (ASTM D 2240), the delay time may be varied.

Shore A hardness values reported for an elastomeric composition are especially sensitive to delay time. An instantaneous reading typically gives a higher reading compared with a delayed reading. Moreover, the delayed reading is more representative not only of the hardness, but also of the resilience, of the elastomer. As an example, Hazelton *et al.* (U.S. 4,607,074), Table II, entry 1, reports a Shore A (instantaneous) of 62 compared with Shore A (15 sec) = 50 for the same elastomer. Therefore, a meaningful comparison of Shore A values for different elastomeric materials can not be made without indicating the variable parameter of delay time. Since claims do not recite the delay time, the exact property being measured is not particularly pointed out and distinctly claimed, and therefore, the subject of the claims is rendered vague and indefinite.

Art Unit: 1796

Claim Rejections - 35 USC § 102 / 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-10 and 12-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ouhadi (EP 757 077); extrinsic evidence furnished in Jourdain *et al.* (U.S. 5,571,883).

Entry 1 of Table 1 of Ouhadi teaches a composition comprising 26.82 wt % of V 3666 EPDM (contains 42.9 % extender oil and 57.1 % elastomer, or, in terms of overall EPDM composition, 11.15 wt % oil and 15.3 wt % EPDM), 7.77 wt % of RP 210 polypropylene resin, and 35.17 wt % of Flexon 876 processing oil. The composition further contains 14.30 wt % of Cariflex 1220 butadiene rubber. Cure is achieved with 1.40 wt % of SP 1045 phenolic resin.

V 3666 is an EPDM copolymer having an ethylene content of 58 wt % and an ethylidene-norbornene content of 4.5 wt % (see Jourdain *et al.*, col. 13, line 61).

The total amount of oil is $11.5 + 35.17 = 46.67$ wt %, and the ratio of oil to elastomer is $46.71/11.5 = 3.05$. Thus, the oil/elastomer ratio is at least 3/1. The amount of thermoplastic polyolefin, RP 210, is less than 10 wt %, relative to the total weight of the composition. The final composition exhibits a Shore A hardness (5 sec) of 34 and good surface aspect. In sum, the composition of Ouhadi is the same as that described in claims 1, 7, and 12-17.

The reference is silent with respect to the granulometric properties recited in instant claims 1-6, 9, and 10, however, in light of the fact that the composition is substantially the same as that described in the instant claims, and in view of the fact that polymer exhibits the same Shore A hardness and good surface aspect, both of which would govern the anti-blocking characteristic exhibited in the specific test recited in the claims, a reasonable basis exists to believe that the composition of Ouhadi is capable of exhibiting substantially the same properties. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA

Art Unit: 1796

1980). See MPEP § 2112-2112.02. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

Regarding claim 8, Ouhadi teaches that compositions are preferably fully cured, but they may be partially cured. The level of cure for the cited example has not been determined, however, it is reasonable to believe that cure of at least 98 % is achieved, since the Shore A hardness of the polymer composition, which is governed in part by the extent of cure of the elastomer, is within the claimed range. Furthermore, the examiner believes that the difference between Ouhadi's recited "fully cured" and the claimed cure level of 98 % are within experimental error, and that there would be little difference in physical properties at that upper bound.

5. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouhadi.

The discussion of the disclosures of the prior art from the previous paragraph of this office action is incorporated here by reference. Working examples in Ouhadi do not disclose a composition exhibiting a Shore A hardness of below 30 or below 25. However, Ouhadi teaches that "very soft" elastomer compositions of the instant invention are characterized by a Shore A hardness in the range of about 20 to about 60. Thus, the Ouhadi reference is fully intending in making very soft compositions having a Shore A value of 20. One of ordinary skill in the art gleans from examples 9 (24.47 parts of oil, Shore A = 37) and 10 (30.47 parts of oil, Shore A = 33) that an increase of oil in the overall formulation results in the formation of a softer elastomer composition. Thus, it would have been obvious to one having ordinary skill in the art to incorporate an increased amount of oil, which is a known softening agent for elastomers, in order to make thermoplastic elastomer compositions having the lower limit of Shore A hardness (value of 20), and the person of ordinary skill in the art would have expected this modification to work with a reasonable expectation of success.

Art Unit: 1796

6. Claims 1-10, 12, and 14, 15, 18, and 19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dozeman *et al.* (U.S. 6,750,292)

Dozeman *et al.* discloses a thermoplastic vulcanizate containing 5 parts by weight (pw) of semi-crystalline polyolefin and 95 pw of an at least partially vulcanized polymer, and an oil (claim 1). The polyolefin is polypropylene (col. 2, line 11), and the rubber is an EPDM in which the diene is selected from ethylidene-norbornene, vinyl norbornene, or dicyclopentadiene (col. 2, lines 21-30). The ratio of oil to rubber is 2.0 (col. 2, line 50). Compositions are at least 95% vulcanized (col. 3, line 11). A phenolic resin is used as vulcanizing agent (col. 3, line 21). In sum, the composition of Ouhadi is the same as that described in claims 1, 7, 8, and 12, 14, and 15.

Dozeman *et al.* is silent with respect to the hardness of the vulcanizate, as recited in claims 1, 18, and 19, and silent with respect to the granulometric properties recited in instant claims 1-6, 9, and 10. However, in light of the fact that the composition of Dozeman *et al.* is substantially the same as that recited in the instant claims, a reasonable basis exists to believe that said composition exhibits the claimed properties. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

7. Claims 1-10 and 13-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hamanka *et al.* (U.S. 5,187,224).

Entry 6 of Table 1 of Hamanka *et al.* teaches a composition prepared by partially crosslinking 69 parts by weight (pw) of EPDM (3-20 wt % of ethylidene norbornene; see col. 3, line 53), 69 pw of oil, 17 pw of propylene-butene copolymer, and compounding the crosslinked product with 100 pw of SEBS elastomer, 15 pw of propylene-ethylene copolymer, and 250 pw of oil.

The total amount of components (69 + 69 + 17 + 100 + 15 + 250) is 520 parts. The total amount of polyolefin is $(17 + 15)/520 = 6.15$ wt %, which is well below the claimed upper limit of 10 wt %. The ratio of oil to EPDM is $(69 + 250)/69 = 4.62$, which exceeds the lower limit of

Art Unit: 1796

2/1 of instant claim 1 and the lower limit of 3/1 as recited in instant claim 17. The final composition exhibits a Shore A hardness (instantaneous value; col. 8, line 11) of 24. In sum, the composition of Hamanka *et al.* is the same as that recited in claims 1, 7, and 13-19.

Hamanka *et al.* does not quantify the degree of cure of the partially cured elastomer, however, it is reasonable to believe the level of cure lies within the range recited in claim 8 because the Shore A hardness of the polymer composition is governed in part by the extent of cure of the elastomer. The reference is also silent with respect to the granulometric properties recited in instant claims 1-6, 9, and 10, however, in light of the fact that the composition is substantially the same as that described in the instant claims, and in view of the fact that polymer exhibits the same Shore A hardness, which would govern the anti-blocking characteristic exhibited in the specific test recited in the claims, a reasonable basis exists to believe that the composition of Hamanka *et al.* is capable of exhibiting substantially the same properties. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

Response to Arguments

8. The rejections of claims over Ouhadi (EP 757 077), Dozeman *et al.* (U.S. 6,750,292), and Hamanka *et al.* (U.S. 5,187,224), set forth in paragraphs 4-7 of the previous office action dated January 22, 2008, have been withdrawn in view of claim amendments. New grounds of rejection based on each of these references have been presented in this office action.

The provisional nonstatutory obviousness-type double patenting rejection of claims as over claims of copending Application No. 10/501,902 has been withdrawn in view of current amendments.

Applicant's arguments are rendered moot in view of new grounds of rejection, however, the following points are noted. Applicant argues that compositions in Ouhadi do not exhibit a ratio of oil to *total* elastomer within the recited range of at least 2/1. While Applicant's

Art Unit: 1796

observation is correct, it is noted that claims only recite a ratio of oil to the elastomer consisting of monomer units of ethylene, α -olefin, and non-conjugated diene. Note that transitional phrase “comprising” in the preamble of the claim does not exclude unrecited components, and note also that dependent claim 13 allows for another thermoplastic polymer.

Applicant also indicates that compositions containing components in the preferred ranges of Dozeman *et al.*, such as those containing 60 parts by weight of polypropylene, would not exhibit the claimed Shore A hardness values. The examiner would arrive at the same conclusion for such a composition containing 60 pw of polypropylene. However, the disclosure of a reference is not limited to preferred embodiments or specific working examples therein. Rather, the references are relevant for all that they contain. Attention is drawn to paragraph 6, *supra*, which describes a composition taught by Dozeman *et al.* which contains 5 pw of semi-crystalline polyolefin, 95 pw of an at least partially vulcanized polymer, and an oil, wherein the ratio of oil to rubber is 2.0. This composition is substantially the same as that recited in the instant claims, and it is incumbent upon Applicant to establish any unobviousness differences with respect to the claimed properties.

Applicant indicates that compositions in Hamanka *et al.* contain SEBS elastomer which would impair the anti-blocking characteristics of the composition. That is, compositions would be tacky. Amendment of claim to recite the transitional phrase “consisting essentially of” does not overcome Hamanka *et al.*, as currently reported in paragraph 7, *supra*, because it refers only to one elastomer. The EPDM of Hamanka *et al.* does, indeed, consist essentially of the three types of monomer units. Note that the transitional phrase “comprising” in the preamble of the claim does not exclude unrecited components, and note also that dependent claim 13 allows for another thermoplastic polymer. With respect to establishing unobviousness differences of anti-blocking properties, the burden of proof is shifted to Applicant to furnish objective evidence, rather than mere argument of counsel. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997); *In re Klosak*, 1455 F.2d 1077, 73 USPQ 14 (CCPA 1972).

Art Unit: 1796

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Rip A. Lee/
Art Unit 1796
October 29, 2008

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796

Application/Control Number: 10/566,280

Page 9

Art Unit: 1796